Serial No. 10/668,403
Art Unit 2874

In the Claims

1. (Currently Amended) Apparatus comprising:

an optical fiber; and

a chip-level optical transceiver carried by a bench disposed in a tilted state aligning the chip-level optical transceiver with the optical fiber, the chip-level optical transceiver comprising:

a light emitting device, having an output, for emitting a first wavelength of light along a first optical path;

a first photodiode for controlling the output of the light emitting device;

a second photodiode having an active region;

a lens for receiving the first wavelength of light along the first optical path from the light emitting device and collimating the first wavelength of light to the second photodiode along the first optical path; and

the second photodiode for reflecting the first wavelength of light along the first optical path into the optical fiber along a second optical path.

2. (Original) Apparatus of claim 1, further comprising a package securing and containing the optical fiber, the bench, and the chip-level optical transceiver carried by the bench.

3. (Original) Apparatus of claim 2, wherein the package comprises:

a support structure securing the fiber;

a header coupled to the support structure; and

the bench carried by the header in front of the optical fiber.

4. (Original) Apparatus of claim 3, wherein the package hermetically seals the bench and the chip-level optical transceiver carried thereby.

5. (Canceled)

6. (Currently Amended) Apparatus of claim ~~5~~4, further comprising:

the optical fiber for transmitting a second wavelength of light to the second photodiode along the second optical path; and

the second photodiode adapted and arranged to permit the second wavelength of light to pass therethrough to the active region thereof for conversion into an electrical signal.

7. (Original) Apparatus of claim 6, wherein the first wavelength of light is different from the second wavelength of light.

8. (Currently Amended) Apparatus comprising:

an optical fiber;

a header mounted adjacent the optical fiber; and

a chip-level optical transceiver supported by a bench carried by the header in a tilted state aligning the chip-level optical transceiver components with the optical fiber, the chip-level optical transceiver comprising:

a light emitting device, having an output, for emitting a first wavelength of light along a first optical path;

a first photodiode for controlling the output of the light emitting device;

a second photodiode having an active region;

a lens for receiving the first wavelength of light along the first optical path from the light emitting device and collimating the first wavelength of light to

the second photodiode along the first optical path; and

the second photodiode for reflecting the first wavelength of light along the first optical path into the optical fiber along a second optical path.

9. (Original) Apparatus of claim 8, further comprising:

a support structure securing the fiber; and

the header coupled to the support structure.

10. (Original) Apparatus of claim 9, wherein the support structure and the header cooperate to hermetically seal the bench and the chip-level optical transceiver carried thereby.

Serial No. 10/668,403
Art Unit 2874

11. (Canceled)

12. (Currently Amended) Apparatus of claim ~~11~~10, further comprising:

the optical fiber for transmitting a second wavelength of light to the second photodiode along the second optical path; and

the second photodiode adapted and arranged to permit the second wavelength of light to pass therethrough to the active region thereof for conversion into an electrical signal.

13. (Original) Apparatus of claim 12, wherein the first wavelength of light is different from the second wavelength of light.

14. (Original) Apparatus of claim 12, wherein the first optical path is coincident to the second optical path.

15. (Currently Amended) Apparatus comprising:

a package including a header;

an optical fiber extending into the package, and secured thereby adjacent the header; and

a chip-level optical transceiver supported by a bench carried by the header in a tilted state aligning the chip-level optical transceiver components with the optical fiber, the chip-level optical transceiver comprising:

a light emitting device, having an output, for emitting a first wavelength of light along a first optical path;

a first photodiode for controlling the output of the light emitting device;

a second photodiode having an active region;

a lens for receiving the first wavelength of light along the first optical path from the light emitting

device and collimating the first wavelength of light to the second photodiode along the first optical path; and

the second photodiode for reflecting the first wavelength of light along the first optical path into the optical fiber along a second optical path.

16. (Original) Apparatus of claim 15, wherein the package hermetically seals the bench and the chip-level optical transceiver carried thereby.

17. (Canceled)

18. (Currently Amended) Apparatus of claim ~~17~~16, further comprising:

the optical fiber for transmitting a second wavelength of light to the second photodiode along the second optical path; and

the second photodiode adapted and arranged to permit the second wavelength of light to pass therethrough to the active region thereof for conversion into an electrical signal.

19. (Original) Apparatus of claim 18, wherein the first wavelength of light is different from the second wavelength of light.

20. (Original) Apparatus of claim 18, wherein the first optical path is coincident to the second optical path.

21. (New) Apparatus comprising:

a header having a surface defining a substantially horizontal plane; and

a chip-level optical transceiver ~~carried~~ supported by a bench carried by the header;

the chip-level optical transceiver disposed in a tilted state aligning the chip-level optical transceiver with an optical fiber, the chip-level optical transceiver comprising:

a light emitting device, having an output, for emitting a first wavelength of light along a first optical path;

a first photodiode for controlling the output of the light emitting device;

a second photodiode having an active region;

a lens for receiving the first wavelength of light along the first optical path from the light

emitting device and collimating the first wavelength of light to the second photodiode along the first optical path; and

the second photodiode for reflecting the first wavelength of light along the first optical path into the optical fiber along a second optical path.

22. (New) Apparatus of claim 21, further comprising an optical fiber aligned with the chip-level optical transceiver.

23. (New) Apparatus of claim 22, further comprising a package securing and containing the optical fiber, the bench, and the chip-level optical transceiver carried by the bench.

24. (New) Apparatus of claim 23, wherein the package comprises:

a support structure securing the fiber;

a header coupled to the support structure; and

the bench carried by the header in front of the optical fiber.

25. (New) Apparatus of claim 24, wherein the package hermetically seals the bench and the chip-level optical transceiver carried thereby.

26. (New) Apparatus of claim 25, further comprising:

the optical fiber for transmitting a second wavelength of light to the second photodiode along the second optical path; and

the second photodiode adapted and arranged to permit the second wavelength of light to pass therethrough to the active region thereof for conversion into an electrical signal.

27. (New) Apparatus of claim 26, wherein the first wavelength of light is different from the second wavelength of light.

28. (New) In an optical fiber and a header mounted adjacent the optical fiber, improvements therein comprising:

a chip-level optical transceiver supported by a bench carried by the header in a tilted state aligning the chip-level optical transceiver components with the optical fiber, the chip-level optical transceiver comprising:

a light emitting device, having an output, for emitting a first wavelength of light along a first optical path;

a first photodiode for controlling the output of the light emitting device;

a second photodiode having an active region;

a lens for receiving the first wavelength of light along the first optical path from the light emitting device and collimating the first wavelength of light to the second photodiode along the first optical path; and

the second photodiode for reflecting the first wavelength of light along the first optical path into the optical fiber along a second optical path.

29. (New) The improvements of claim 28, further comprising a package securing and containing the optical fiber, the bench, and the chip-level optical transceiver carried by the bench.

30. (New) The improvements of claim 29, wherein the package comprises:

a support structure securing the fiber;

a header coupled to the support structure; and

the bench carried by the header in front of the optical fiber.

31. (New) The improvements of claim 30, wherein the package hermetically seals the bench and the chip-level optical transceiver carried thereby.

32. (New) The improvements of claim 31, further comprising:

the optical fiber for transmitting a second wavelength of light to the second photodiode along the second optical path; and

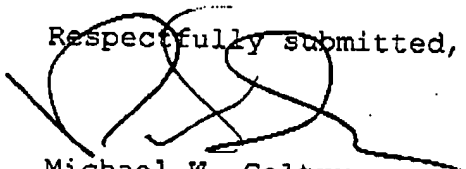
the second photodiode adapted and arranged to permit the second wavelength of light to pass therethrough to the active region thereof for conversion into an electrical signal.

33. (New) The improvements of claim 32, wherein the first wavelength of light is different from the second wavelength of light.

34. (New) The improvements of claim 32, wherein the first optical path is coincident to the second optical path.

Serial No. 10/668,403
Art Unit 2874

Respectfully submitted,



Michael W. Goltry
Attorney for Applicant
Reg. No. 39,692
CN 45848

01 August 2005
4000 North Central Avenue
Suite 1220
Phoenix, Arizona 85012
(602) 252-7494